

Set Name Query
side by sideHit Count Set Name
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=ADJ

<u>L17</u>	L14 not l16	36	<u>L17</u>
<u>L16</u>	l14 and L15	2	<u>L16</u>
<u>L15</u>	maltable grain\$1	2	<u>L15</u>
<u>L14</u>	l1 same l7	38	<u>L14</u>
<u>L13</u>	L12 not l8	1	<u>L13</u>
<u>L12</u>	l3 and l7	9	<u>L12</u>
<u>L11</u>	L8 not l10	6	<u>L11</u>
<u>L10</u>	l8 and L9	2	<u>L10</u>
<u>L9</u>	lactic	64191	<u>L9</u>
<u>L8</u>	l5 and L7	8	<u>L8</u>
<u>L7</u>	(sprout\$3 or root\$3) with (prevent\$6 or retard\$6 or inhibit\$6)	12844	<u>L7</u>
<u>L6</u>	root\$3 with (prevent\$6 or retard\$6 or inhibit\$6)	11985	<u>L6</u>
<u>L5</u>	l3 and L4	262	<u>L5</u>
<u>L4</u>	ferment\$6	94715	<u>L4</u>
<u>L3</u>	l1 and L2	291	<u>L3</u>
<u>L2</u>	corn with steep\$3	6212	<u>L2</u>
<u>L1</u>	malt\$5 with (grain\$1 or wheat or barley or rye)	3284	<u>L1</u>

END OF SEARCH HISTORY

WEST

Search Results - Record(s) 1 through 2 of 2 returned.

1. Document ID: US 20030060369 A1

L10: Entry 1 of 2

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030060369
 PGPUB-FILING-TYPE: new
 DOCUMENT-IDENTIFIER: US 20030060369 A1

TITLE: Root retardant

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Johal, Sarjit	Iowa City	IA	US	
Antrim, Richard L	Solon	IA	US	

US-CL-CURRENT: 504/174

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMC
Draw	Desc	Image									

2. Document ID: EP 1305397 A2 WO 200210331 A2 AU 200178080 A US 20030060369 A1

L10: Entry 2 of 2

File: DWPI

May 2, 2003

DERWENT-ACC-NO: 2002-227082

DERWENT-WEEK: 200331

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TITLE: Malting composition, useful in producing fermented beverages, e.g. malt liquors, comprises maltable grain and root retardant

INVENTOR: ANTRIM, R L; JOHAL, S

PRIORITY-DATA: 2000US-221830P (July 28, 2000), 2002US-0089496 (May 1, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1305397 A2	May 2, 2003	E	000	C12C001/047
WO 200210331 A2	February 7, 2002	E	025	C12C001/047
AU 200178080 A	February 13, 2002		000	C12C001/047
US 20030060369 A1	March 27, 2003		000	A01N001/00

INT-CL (IPC): A01 N 1/00; A01 N 37/36; A01 N 63/02; A01 N 65/00; A23 L 1/185; C12 C 1/047

WEST

L10: Entry 1 of 2

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030060369
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030060369 A1

TITLE: Root retardant

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Johal, Sarjit	Iowa City	IA	US	
Antrim, Richard L	Solon	IA	US	

APPL-NO: 10/ 089496 [PALM]
DATE FILED: May 1, 2002

PCT-DATA:

DATE-FILED	APPL-NO	PUB-NO	PUB-DATE	371-DATE	102 (E) -DATE
Jul 30, 2001	PCT/US01/23880				

INT-CL: [07] A01 N 1/00

US-CL-PUBLISHED: 504/174
US-CL-CURRENT: 504/174

ABSTRACT:

The present invention provides a method of retarding rootlet formation from one or more plants in a medium that can support the growth thereof, which method includes introducing into the medium a growth inhibiting effective amount of a growth inhibitor which comprises corn steep liquor. In other embodiments, the growth inhibitor is a mixture of a growth medium and lactic acid. In preferred embodiments, the present invention further provides a malting composition that includes a fermentable grain and a growth inhibitor, wherein the growth inhibitor is present in an amount effective to retard rootlet formation.

WEST

End of Result Set

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L10: Entry 2 of 2

File: DWPI

May 2, 2003

DERWENT-ACC-NO: 2002-227082

DERWENT-WEEK: 200331

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Malting composition, useful in producing fermented beverages, e.g. malt liquors, comprises maltable grain and root retardant

INVENTOR: ANTRIM, R L; JOHAL, S

PATENT-ASSIGNEE: GRAIN PROCESSING CORP (GRAI), ANTRIM R L (ANTRI), JOHAL S (JOHAI)

PRIORITY-DATA: 2000US-221830P (July 28, 2000), 2002US-0089496 (May 1, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1305397 A2	May 2, 2003	E	000	C12C001/047
WO 200210331 A2	February 7, 2002	E	025	C12C001/047
AU 200178080 A	February 13, 2002		000	C12C001/047
US 20030060369 A1	March 27, 2003		000	A01N001/00

DESIGNATED-STATES: AL AT BE CH CY DE DK ES FI FR GB GR IE IT LI LT LU LV MC MK NL PT RO SE SI TR AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 1305397A2	July 30, 2001	2001EP-0956043	
EP 1305397A2	July 30, 2001	2001WO-US23880	
EP 1305397A2		WO 200210331	Based on
WO 200210331A2	July 30, 2001	2001WO-US23880	
AU 200178080A	July 30, 2001	2001AU-0078080	
AU 200178080A		WO 200210331	Based on
US20030060369A1	July 30, 2001	2001WO-US23880	
US20030060369A1	May 1, 2002	2002US-0089496	

INT-CL (IPC): A01 N 1/00; A01 N 37/36; A01 N 63/02; A01 N 65/00; A23 L 1/185; C12 C 1/047

ABSTRACTED-PUB-NO: WO 200210331A

BASIC-ABSTRACT:

NOVELTY - A malting composition comprising maltable grain and root retardant, where the root retardant comprises corn steep liquor or a mixture of deMan-Rosola-Sharpe (MRS) medium and lactic acid, present in an amount the retards root formation of

· maltable grain, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

(1) production of fermented beverage by preparing and fermenting the malting composition;

(2) a fermented beverage produced by the method; and

(3) malting a maltable grain comprising preparing and fermenting the malting composition.

USE - For producing fermented beverages, e.g. malt liquors, lagers (such as pilsners, Dortmunder, Munich and steam), weissbiers, bock beer, ales, stouts, porters, spruce beer, honey ales and mulled ales.

ADVANTAGE - The incorporation of root retardant effectively inhibits root formation of maltable grain, thus eliminating additional processing costs.

ABSTRACTED-PUB-NO: WO 200210331A

EQUIVALENT-ABSTRACTS:

CHOSEN-DRAWING: Dwg.0/0

DERWENT-CLASS: D16

CPI-CODES: D05-B01; D05-B02; D05-E;

WEST

Search Results - Record(s) 1 through 6 of 6 returned.

1. Document ID: US 20020121046 A1

L11: Entry 1 of 6

File: PGPB

Sep 5, 2002

PGPUB-DOCUMENT-NUMBER: 20020121046
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20020121046 A1

TITLE: Method and composition for promoting and controlling growth of plants

PUBLICATION-DATE: September 5, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Yamashita, Thomas T.	Turlock	CA	US	

US-CL-CURRENT: 47/58.1SC; 71/27

<input type="button" value="Full"/>	<input type="button" value="Title"/>	<input type="button" value="Citation"/>	<input type="button" value="Front"/>	<input type="button" value="Review"/>	<input type="button" value="Classification"/>	<input type="button" value="Date"/>	<input type="button" value="Reference"/>	<input type="button" value="Sequences"/>	<input type="button" value="Attachments"/>	<input type="button" value="KMC"/>
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2. Document ID: US 6318023 B1

L11: Entry 2 of 6

File: USPT

Nov 20, 2001

US-PAT-NO: 6318023
DOCUMENT-IDENTIFIER: US 6318023 B1

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: November 20, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita, Thomas T.	Turlock	CA	95360	

US-CL-CURRENT: 504/117; 47/57.6, 504/116.1

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<input type="button" value="Draw Desc"/>	<input type="button" value="Image"/>									

3. Document ID: US 6309440 B1

L11: Entry 3 of 6

File: USPT

Oct 30, 2001

US-PAT-NO: 6309440

DOCUMENT-IDENTIFIER: US 6309440 B1

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: October 30, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Hanford	CA	93230	

US-CL-CURRENT: 71/27; 47/57.6, 47/DIG.10, 71/11, 71/25, 71/26, 71/28, 71/29, 71/30,
71/64.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
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 4. Document ID: US 5797976 A

L11: Entry 4 of 6

File: USPT

Aug 25, 1998

US-PAT-NO: 5797976

DOCUMENT-IDENTIFIER: US 5797976 A

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: August 25, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Hanford	CA	93230	

US-CL-CURRENT: 71/26; 71/11, 71/64.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

 5. Document ID: US 5549729 A

L11: Entry 5 of 6

File: USPT

Aug 27, 1996

US-PAT-NO: 5549729

DOCUMENT-IDENTIFIER: US 5549729 A

TITLE: Method and composition for promoting and controlling growth of plants

DATE-ISSUED: August 27, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Yamashita; Thomas T.	Hanford	CA	93230	

US-CL-CURRENT: 71/26; 71/11, 71/64.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KOMC

 6. Document ID: US 3647473 A

L11: Entry 6 of 6

File: USPT

Mar 7, 1972

US-PAT-NO: 3647473

DOCUMENT-IDENTIFIER: US 3647473 A

TITLE: MALTING GRAIN

DATE-ISSUED: March 7, 1972

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stowell; Keith Christopher	Newark			EN
Howlett; Peter Michael	Newark-on-Trent			EN

US-CL-CURRENT: 426/29; 426/18, 99/278, 99/600

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KOMC

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Terms	Documents
L8 not 110	6

Display Format: [Previous Page](#) [Next Page](#)

WEST

L11: Entry 1 of 6

File: PGPB

Sep 5, 2002

DOCUMENT-IDENTIFIER: US 20020121046 A1

TITLE: Method and composition for promoting and controlling growth of plants

Abstract Paragraph (2):

The method is useful for treating vegetation to promotes plant growth and/or crop production, also for treating pollen, seeds, roots and soil and inhibiting growth of insects and micro-organisms. A formulation including an energy/carbon skeleton component, a macro nutrient component and a micro.nutrient component is applied,, e.g. in aqueous solution by foliar spraying. This is done in a manner to make optimum use of the inherent ability of vegetation to harvest solar energy and to utilize other sources of energy and carbon skeleton, such that the energy and nutrients applied by the method of the invention is a fraction of the energy and carbon skeleton requirements of the vegetation.

Detail Description Paragraph (65):

[0088] sugar-mannose, lactose, dextrose, arylthrose, fructose, fucose, galactose, glucose, gulose maltose, polysaccharide, raffinose, ribose, ribulose, rutinose, saccharose, stachyose, trehalose, xylose, xylulose, adonose, amylose, arabinose, fructose phosphate, fucose-p, galactose-p, glucose-p, lactose-p, maltose-p, mannose-p, ribose-p, ribulose-p, xylose-p, xylulose-p, deoxyribose, corn steep liquor, whey, corn sugar, corn syrup, maple syrup, grape sugar, grape syrup, beet sugar, sorghum molasses, cane molasses, calcium lignosulfonate

Detail Description Paragraph (260):

[0275] The previously outlined preferred "Bright Sun" is diluted in the mixing tanks and/or spray rig tank to which is added fermentation and/or plate cultures of naturally occurring antagonists isolated from plant surfaces. The bacteria are not genetically altered but were isolated by the author from almond bud wood. It is a naturally occurring, commonly found species which lives epiphytically on various species of plants. The population is diluted to a concentration of about one billion colony forming units (cfu) per milliliter of dilute spray mix.

Detail Description Paragraph (261):

[0276] Conditioning of the organisms is accomplished by including 0.4% V/V of Bright Sun into the fermentation tank substrate (8 gr/L nutrient broth) or petri plate medium (23 gr/L NA). Subsequently, the spraying of Bright Sun not only serves as a carrier but coats plant surfaces with a temporary substrate for initial colonization. Bright Sun also provides the growing plant with substantial quantities of various nutrients. With an optimal growth status the plant is capable of exuding more of the bacterial growth promoting organic acids and related nutrients.

Detail Description Paragraph (286):

[0300] Gleocladium roseum, B. subtilis, S. griseus and Ps. fluorescens are cultured in fermentation tanks similar to that for Gloeocapsa but without lighting and with a different substrate. Nutrient broth (8 gr/L) is supplemented with Bright Sun (0.4% v/v). Pseudomonas fluorescens is a fast grower and is generally mature within 48 hours culturing time. The remaining three species require a minimum culturing period of 72 hours and in many cases 120 hours. All operations are conducted aseptically, under constant, low aeration and at 25 degrees C.

Detail Description Paragraph (317):

[0329] Bacillus subtilis, S. Thuringiensis and Pseudomonas fluorescens are cultured

in fermentation tanks with the following media:

Detail Description Paragraph (318):

[0330] The ingredients are brought to a boil then autoclaved in flasks at 15 psi, 121 degrees C. for 25 minutes. Large-scale operations may replace autoclaving with the use of ultraviolet (UV) lamp sterilizers. The media is first boiled in a concentration about twenty times that of actual usage. It is then diluted with water to the appropriate levels before being pumped through the UV sterilizing unit. The sterilized media is transferred from the UV sterilizer to fermentation tanks equipped with sterile aeration units. Starter cultures of the organisms are grown in shake culture flasks 48 hours prior to their inoculation into fermentation tanks. All cultures are kept at 26 degrees C. and under low light intensity. *Pseudomonas fluorescens* requires 24-49 hours culturing, while *B. subtilis* and *B. thuringiensis* may require 72-120 hours.

Detail Description Table CWU (17):

17 Preferred Method for "MORNING SUN" Item Concentration Source Part I Mix: Bright Sun parent mix Bright Sun Katy-J Complexing Agent 5 gr/gal mix Katy-J (JKT Corp.) Part II Mix: *Gloeocapsa* sp. 1 trillion cfu fermentation per gallon mix cultures of *Streptomyces griseus* 1 trillion cfu fermentation per gallon mix cultures of *Gleocladium roseum* 1 trillion cfu fermentation per gallon mix cultures of *Bacillus subtilis* 1 trillion cfu fermentation per gallon mix cultures of *Pseudomonas fluorescens* 1 trillion cfu fermentation per gallon mix cultures of Cellulase 2,500 units/gal Type VII from *Penicillium funiculosum* Alpha amylase 36,000 units/gal Type XA from *Aspergillus oryzae* Glycerol 2 qt./gal glycerol Buffer 8 oz./gal phosphate buffer Zinc sulfate 0.05% w/v zinc sulfate Manganese sulfate 0.05% w/v manganese sulfate Iron sulfate 0.05% w/v Ferrous sulfate

Detail Description Table CWU (18):

18 Alternative Concentrations Part I Mix: Bright Sun see original text on Bright Sun Katy-J 0.000001-20 gr/gal Part II Mix: *Gloeocapsa* sp. 1.0-10 (20th) cfu/gal *S. griseus* " *B. subtilis* " *Ps. fluorescens* " *G. roseum* " Cellulase 1.0-10,000 units/gal a-amylase 1.0-75,000 units/gal glycerol 1.0-90% v/v Buffer 1.0-10% v/v Zinc sulfate 1.0-20% w/v Manganese sulfate 1.0-20% w/v Iron sulfate 1.0-20% w/v Alternate Sources Part I Mix: (see original text on Bright Sun) Part II Mix: *Gloeocapsa* sp.: *Anabaena* sp. *S. griseus*: *S. aureofaciens* *B. subtilis*: *B. megaterium*, *B. cereus*, *B. brevis* *Ps. fluorescens*: *Ps. putida* *G. roseum*: *Tallaromyces flavus*, *Trichoderma viride*, *T. harzianum*, *Penicillium citrinum*, *Acremonium falciforme*, *Ulocladium tuberculatum* Cellulase: Type I (*Aspergillus niger*), Type II (*A. niger*), Type V (*T. viride*), Type VI (*T. viride*), from *T. fusca* a-amylase: Type IA (porcine pancreas), Type IIIA (*Bacillus* sp.) Type XI-A (*Bacillus* sp.) Type VI-A, Type VII-A (porcine pancreas), Type VIII-A (barley malt) Glycerol: glycerol Buffer: see original text on Bright Sun Zn, Mn and Fe sulfates: see original text on Bright Sun.

Detail Description Table CWU (24):

24 Preferred Method for Producing "SUN COAT" Ratio or Concentration Source Material Bright sun 10% v/v Bright Sun Algin 2% v/v Kelton LV Bentonite Clay 4% v/v Bentonite Clay Buffer 25 mM 25 mM K2HPO4 25 mM KH2PO4 Katy-J 2 gr/gal mix Katy-J Complexing Agent *Bacillus subtilis* 4 .times. 10 (12th) plate/ cfu/gal fermentation cultures *Pseudomonas* 4 .times. 10 (12th) plate/ *fluorescens* cfu/gal fermentation cultures *Bacillus* 4 .times. 10 (12th) plate/ *thuringiensis* cfu/gal fermentation cultures *Gliocladium* 4 .times. 10 (10th) seed/plate *virens* cfu/gal cultures *Gliocladium virens* is first cultured on boiled wheat seeds using the following procedure: wheat seeds 1 cup Bright Sun 2 oz. water 14 oz.

WEST

L11: Entry 2 of 6

File: USPT

Nov 20, 2001

DOCUMENT-IDENTIFIER: US 6318023 B1

TITLE: Method and composition for promoting and controlling growth of plants

Abstract Text (2):

The method is useful for treating vegetation to promotes plant growth and/or crop production, also for treating pollen, seeds, roots and soil and inhibiting growth of insects and micro-organisms. A formulation including an energy/carbon skeleton component, a macro nutrient component and a micro nutrient component is applied, e.g. in aqueous solution by foliar spraying. This is done in a manner to make optimum use of the inherent ability of vegetation to harvest solar energy and to utilize other sources of energy and carbon skeleton, such that the energy and nutrients applied by the method of the invention is a fraction of the energy and carbon skeleton requirements of the vegetation.

Brief Summary Text (89):

sugar-mannose, lactose, dextrose, arylthrose, fructose, fucose, galactose, glucose, gulose, maltose, polysaccharide, raffinose, ribose, ribulose, rutinose, saccharose, stachyose, trehalose, xylose, xylulose, adonose, amylose, arabinose, fructose phosphate, fucose-p, galactose-p, glucose-p, lactose-p, maltose-p, mannose-p, ribose-p, ribulose-p, xylose-p, xylulose-p, deoxyribose, corn steep liquor, whey, corn sugar, corn syrup, maple syrup, grape sugar, grape syrup, beet sugar, sorghum molasses, cane molasses, calcium lignosulfonate

Brief Summary Text (283):

The previously outlined preferred "Bright Sun" is diluted in the mixing tanks and/or spray rig tank to which is added fermentation and/or plate cultures of naturally occurring antagonists isolated from plant surfaces. The bacteria are not genetically altered but were isolated by the author from almond bud wood. It is a naturally occurring, commonly found species which lives epiphytically on various species of plants. The population is diluted to a concentration of about one billion colony forming units (cfu) per milliliter of dilute spray mix.

Brief Summary Text (284):

Conditioning of the organisms is accomplished by including 0.4% v/v of Bright Sun into the fermentation tank substrate (8 gr/L nutrient broth) or petri plate medium (23 gr/L MA). Subsequently, the spraying of Bright Sun not only serves as a carrier but coats plant surfaces with a temporary substrate for initial colonization. Bright Sun also provides the growing plant with substantial quantities of various nutrients. With an optimal growth status the plant is capable of exuding more of the bacterial growth promoting organic acids and related nutrients.

Brief Summary Text (312):

Gleocladium roseum, B. subtilis, S. griseus and Ps. fluorescens are cultured in fermentation tanks similar to that for Gloeocapsa but without lighting and with a different substrate. Nutrient broth (8 gr/L) is supplemented with Bright Sun (0.4% v/v). Pseudomonas fluorescens is a fast grower and is generally mature within 48 hours culturing time. The remaining three species require a minimum culturing period of 72 hours and in many cases 120 hours. All operations are conducted aseptically, under constant, low aeration and at 25 degrees C.

Brief Summary Text (323):

a-amylase: Type IA (porcine pancreas), Type IIA (Bacillus sp.) Type XI-A (Bacillus

sp.) Type VI-A, Type VII-A (procine pancreas), Type VIII-A (barley malt)

Brief Summary Text (356):

Bacillus subtilis, B. Thuringiensis and Pseudomonas fluorescens are cultured in fermentation tanks with the following media:

Brief Summary Text (357):

The ingredients are brought to a boil then autoclaved in flasks at 15 psi, 121 degrees C. for 25 minutes. Large-scale operations may replace autoclaving with the use of ultraviolet (UV) lamp sterilizers. The media is first boiled in a concentration about twenty times that of actual usage. It is then diluted with water to the appropriate levels before being pumped through the UV sterilizing unit. The sterilized media is transferred from the UV sterilizer to fermentation tanks equipped with sterile aeration units. Starter cultures of the organisms are grown in shake culture flasks 48 hours prior to their inoculation into fermentation tanks. All cultures are kept 26 degrees C. and under low light intensity. Pseudomonas fluorescens requires 24-49 hours culturing, while B. subtilis and B. thuringiensis may require 72-120 hours.

Brief Summary Paragraph Table (17):

Preferred Method for "MORNING SUN" Item Concentration Source Part I Mix: Bright Sun parent mix Bright Sun Katy-J complexing 5 gr/gal mix Katy-J Agent (JKT Corp.) Part II Mix: Gloeocapsa sp. 1 trillion cfu fermentation per gallon mix cultures of Streptomyces 1 trillion cfu fermentation griseus per gallon mix cultures of Gleocladium 1 trillion cfu fermentation roseum per gallon mix cultures of Bacillus subtilis 1 trillion cfu fermentation per gallon mix cultures of Pseudomonas 1 trillion cfu fermentation fluorescens per gallon mix cultures of Cellulase 2,500 units/gal Type VII from Penicillium funiculosum Alpha amylase 36,000 units/gal Type XA from Aspergillus pryzae Glycerol 2 qt./gal glycerol Buffer 8 oz./gal phosphate buffer Zinc sulfate 0.05% w/v zinc sulfate Manganese sulfate 0.05% w/v manganese sulfate Iron sulfate 0.05% w/v Ferrous sulfate

Brief Summary Paragraph Table (24):

Preferred Method for Producing "SUN COAT" Material Concentration Source Bright Sun 10% v/v Bright Sun Algin 2% v/v Keltone LV Bentonite Clay 4% v/v Bentonite Clay Buffer 25 mM 25 mM K2HPO4 25 mM KH2PO4 Katy-J 2 gr/gal mix Katy-J Agent complexing Bacillus subtilis 4 .times. 10 (12th) plate/ cfu/gal fermentation cultures Pseudomonas 4 .times. 10 (12th) plate/ fluorescens cfu/gal fermentation cultures Bacillus 4 .times. 10 (12th) plate/ thuringiensis cfu/gal fermentation cultures Gliocladium 4 .times. 10 (10th) seed/plate virens cfu/gal cultures

WEST

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L11: Entry 6 of 6

File: USPT

Mar 7, 1972

DOCUMENT-IDENTIFIER: US 3647473 A

TITLE: MALTING GRAINAbstract Text (1):

A process and apparatus for dehusking cereal grain by a dry mechanical method at a temperature not above about 105.degree. F., and wherein the moisture content of the grain is above about 8 percent by weight in order to damage the grain so that substantial rootlet growth is prevented without substantially damaging the aleurone layer. The dehusked grain is subsequently malted and there are advantages compared with conventional malting of husked grain.

Brief Summary Text (1):

The invention concerns improvements relating to the malting of cereal grains, for example the malting of barley for use in brewing or distilling.

Brief Summary Text (2):

By conventional procedure the selection of grain for malting has always required that the husk of the barley is undamaged. A damaged husk usually indicated that mechanical damage to the grain had occurred during harvesting or handling of the grain prior to purchase impairing the malting quality of the grain.

Brief Summary Text (3):

Thus, undamaged husked grain has been used for malting. Briefly, in known practice, the husked grain is steeped in water, then cast or floored to germinate with the development and growth of the acrospire and possibly rootlets. The floored grain may be sprinkled with water. During germination the grain respires, and enzymes develop which convert the proteins and starch of the grain into simpler substances which are more soluble and/or diffusible. When germination has proceeded to a required extent it is arrested by kilning the grain, which is thereafter screened to remove the bulk of the rootlets. The malting loss, as measured by the loss in dry weight of material in processing barley into malt, is represented by a steeping loss, the grain respiration loss, and the screening loss.

Brief Summary Text (5):

We have now found that malted cereal grain can be prepared by removing husk from the grain by a dry mechanical method damaging the grain so that substantial rootlet growth is prevented without substantially damaging the aleurone layer thus allowing the dehusked grain to malts.

Brief Summary Text (6):

The invention provides a process of preparing malted cereal grain comprising the steps of removing husk from the grain by a dry mechanical method damaging the grain so that substantial rootlet growth is prevented without substantially damaging the aleurone layer and malting the dehusked grain.

Brief Summary Text (8):

The invention also provides malted cereal grain when prepared by such a process.

Brief Summary Text (9):

The invention also provides a process of producing wort wherein such malted grain is mashed.

Brief Summary Text (13):

Although the husk is removed without substantially damaging the aleurone layer of the grain, certain damage to the embryo occurs and damage to other areas may occur. The damage to the embryo is sufficient to prevent substantial rootlet growth.

Brief Summary Text (15):

1. More rapid uptake of moisture by the corn allowing a reduction in steeping time.

Brief Summary Text (18):

The overall advantage of the first two advantages mentioned above is to significantly reduce the processing time for the malting procedure, and the third advantage improves the yield for the conversion of barley into malt.

Brief Summary Text (19):

In addition, as the husk is removed prior to the malting process (normally 7-10 percent of the weight of the barley) the throughput of the plant can be increased by this percentage, in addition to any increases arising from the reduction in the processing time.

Brief Summary Text (20):

A still further advantage arises from the fact that the husk of the grain causes difficulties which hinder the malting process (dormancy and water sensitivity) and by removing the husk these problems are very much reduced.

Brief Summary Text (23):

For example, in a typical known process of malting barley an additive treatment comprises a water sprinkle with 0.25 parts per million of gibberellic acid and 100 parts per million (calculated as potassium bromate) of potassium, sodium or calcium bromate, with respect to the dry weight of barley.

Brief Summary Text (26):

In a process of producing beer wherein malted grain is used as produced by the process described, husks removed from grain prior to malting are, for example, introduced at a stage subsequent to malting, for example by introduction into the mash. The husks can have an advantageous effect in the subsequent stages of the brewing process and on the resulting beer, and introduction into the mash facilitates subsequent filtration thereof.

Brief Summary Text (27):

The invention also provides malting plant comprising dehusking means for removing husk from cereal grain damaging the grain so that substantial rootlet growth is prevented without damaging the aleurone layer, and means for malting the dehusked grain.

Brief Summary Text (28):

The invention also provides wort production plant comprising such malting plant and mashing means adapted to receive malted grain from the malting means of said plant.

Brief Summary Text (30):

For malting barley, prior to malting the barley it is dehusked by mechanical means, without shattering the endosperm or causing to the grain a degree of damage which would impair its function in malting. The barley for dehusking is normally taken as it comes, and no special steps are taken to adjust its moisture content providing the moisture content is between 8 and 16 percent by weight; below 8 percent excessive shattering of grain may occur and above 16 percent the dehusking time may be excessive. The dehusking action is distinct from that in the known dehusking of barley or oats to improve the feed value, where the endosperm is shattered into grits which are only suitable for flaking or grinding into a flour.

Brief Summary Text (31):

The dehusking can be effected by any suitable apparatus. One example of such apparatus comprises a hemispherical bowl symmetrical about a vertical axis with alloy propeller blading in the base comprising two swept back generally curved blades, each of which presents a blunt leading edge which is radiused and polished;

the blading rotates about said axis at about 2,500 r.p.m. The blading is rotated by an electric motor. With this action only the husk of the grain is removed. A small percentage of corns are broken (about 2 percent) but the aleurone layer of the corn is undamaged and the embryo is not removed; broken corns are removed before malting. The aleurone layer appears to have great importance in initiating the enzyme activity necessary for modification. The grain is very slightly damaged at the rootlet end and this apparently has an advantage in relation to malting. The apparatus provides a consistent supply of dehusked barley. Grain size is immaterial whereas moisture content can significantly affect the degree of dehusking and subsequent germination. Typical variations which may occur are shown in Table I; these results should only be considered as relative to each other since a change in blading characteristic can significantly shift the balance in either direction.
##SPC1##

Brief Summary Text (44):

The malted grain is mashed to produce a wort which for example in the production of beer or distilled spirits, such as whisky, is fermented by the addition of yeast. Alternatively, for example the wort is concentrated to a wort syrup.

Brief Summary Text (45):

The analysis and brewing properties of the dehusked malt will now be considered; all appropriate parameters are as determined by the Recommended Methods of the Institute of Brewing, London, England. In view of the fact that the husks have been removed all the analytical values of the malts are raised by 6-7 percent. Consequently, a normal ale analysis for dehusked malt of ale-brewing quality would be in the order of Dry Extract: 109 lbs., Cold Water Extract: 20 percent, Index of Modification: 40, whereas a typical lager malt would have a Congress Analysis with a dry extract of 87 percent and Kolbach Index of 43 percent. Obviously, 100 qrs. of dehusked malt would be equivalent in brewing yield to about 106 qrs. of normal malt. There is a tendency for the Diastatic Power of malts made by the present process to be slightly lower (10-20 percent) than normal but since they are so well modified they convert during brewing in about half the time taken by a normal ale malt. The brewing worts are rich in .alpha.-amino nitrogen which is valuable for yeast feeding during fermentation and also the wort pH's are slightly lower than normal. Thus, 100 percent utilization of this malt in mashing will produce a wort with a pH value 0.3 to 0.4 units lower than the value expected with a normal wort. Since this lowering of pH of the wort is often required by brewers it normally has to be artificially achieved by alternative treatments. The use of dehusked malt would apparently confer this benefit to the brewer without incurring additional costs to the process.

Brief Summary Text (47):

In a process of producing beer, the resultant malted grain may be mashed to produce wort, as a complete replacement for ordinary malted grain. In this case, husks removed from grain prior to malting are for example reintroduced at a stage subsequent to malting, for example by introduction into the mash, as indicated above. Husks may be reintroduced in the same proportion to the dehusked grain after malting as occurs with the original husked grain, or possibly in any desired lesser or greater proportion. Preferably between 50 percent and 100 percent by weight of husk removed is introduced into the mash, for example substantially 100 percent.

Brief Summary Text (48):

Alternatively, the resultant malt may be mashed as an adjunct of normal malted grain for example in the proportion of not more than 50 percent, e.g., between 25 and 50 percent with respect to the total weight of malted grain. Its virtue would be in its high extract yield, an abundance of yeast feeding properties and wort pH adjustment. These factors would all be of considerable value to any brewer using high adjunct rates and thus this malt would be a good aid for providing a balanced wort.

Brief Summary Text (50):

Also in a distillation process, the resultant malt may replace ordinary malt in the mash tun either completely or partially by for example not more than 50 percent e.g., between 25 and 50 percent with respect to the total weight of malted grain without causing filtration problems. Also, absorption of peat reek can be better with the dehusked malt in comparison with the normal product.

Brief Summary Text (51):

Reverting to the malting process, removal of the husk as described from dormant and water-sensitive barley has been found to break dormancy and reduce the degree of water sensitivity. Thus except when prolonged storage is necessary the dehusking process may reduce the need and therefore the expense of drying the conditioning barley. Furthermore, the so-called nonmalting varieties may make comparatively better malt by a dehusked process than by conventional techniques.

Brief Summary Text (54):

If barley is costed at 90/- qr. the weight loss will add 10/- to the cost of 1 qr. of barley as ready for malting. However, the offal has a resale value of about 8 per ton which reduces the overall loss to about 7/- qr. Consequently, the weight loss arising from the dehusking will add about 7/- to the cost of 1 qr. (4 cwts.) of barley as ready for malting.

Brief Summary Text (61):

The invention has been described above with reference to barley grain, but it is applicable to other cereal grain for malting such as wheat.

Detailed Description Text (1):

The brewing plant (FIG. 1) embodying the invention comprises grain-dehusking apparatus 12, a separator 13, malting means 14, mashing means 16 and means 18 for converting mash into beer.

Detailed Description Text (2):

In the operation of the plant husk is removed from barley grain in the apparatus 12 and the husk is separated from the dehusked grain in the separator 13; the grain then passes to the malting means 14, where it is malted; the malted grain is then mashed with water and conventional adjuncts in the mashing means 16; mash from the mashing means 16 then passes to the means 18 where it is converted into beer by conventional processing. Each of the separator 13, malting means 14, mashing means 16 and means 18, is known and forms no part of the present invention per se. Husks separated in the separator 13 are, for example, added to the mash in the mashing means 16; passage of the husks to the mashing means 16 is indicated at 20. Any broken corns are removed from the dehusked grain before it is malted.

Detailed Description Text (6):

The dehusking means 22 comprises a bowl 44 having an inverted frustoconical shell secured in the framework 27 with its axis vertical and adapted to contain barley grain to be dehusked. A rotor 46 is mounted on a vertical shaft assembly 48 for rotation about said vertical axis in a lower portion of the bowl 44. The apparatus comprises an electric motor 50 secured on the framework 27 and arranged to drive the rotor 46 via a belt drive 52 and the shaft assembly 48, so that husk is removed from the grain damaging the grain so that substantial rootlet growth is prevented without damaging the aleurone layer.

Detailed Description Text (21):

It is believed that in the dehusking means 22 only the husk of the barley is removed and the embryo is damaged so as to prevent substantial rootlet growth. A small percentage of corns are broken (about 2 percent) but the aleurone layer of the corn is substantially undamaged.

Other Reference Publication (1):

Lake, J. R., "Harvesting Malting Barley," J. of Inst. of Brewing, Vol. 72, p. 411, 1966

CLAIMS:

1. A process for preparing malted cereal grain comprising the steps of

a. dehusking grain by a dry mechanical method at a temperature not above about 105.degree. F., and wherein the moisture content of the grain is above about 8 percent by weight so as to damage the grain sufficiently to prevent substantial rootlet growth without substantially damaging the aleurone layer and

b. malting the so dehusked grain.

10. A process of producing wort comprising the steps of

a. mashing malted grain produced by a process according to claim 1 and

b. introducing into the so-produced mash husk removed from the grain by the dehusking.

11. Malting plant comprising mechanical dehusking means for removing husk from cereal grain at a temperature not above about 105.degree. F. and at a grain moisture content above about 8 percent by weight which damages the grain sufficiently to prevent substantial rootlet growth without substantially damaging the aleurone layer, and means for malting the dehusked grain.

12. Wort production plant comprising

a. a malting plant which comprises mechanical dehusking means for removing husk from cereal grain at a temperature not above about 105.degree. F. and at a grain moisture content above about 8 percent by weight which damages the grain sufficiently to prevent substantial rootlet growth without substantially damaging the aleurone layer, and means for malting the dehusked grain,

b. mashing means for receiving malted grain from the said malting means and for mashing said grain to produce wort,

c. means for separating husk from the dehusking means and

d. means for introducing said separated husk into the said mashing means.

18. A process for preparing malted cereal grain comprising the steps of

a. removing husk from the grain by a dry mechanical method at a temperature not above about 105.degree. F. and wherein the moisture content of the grain is above about 8 percent by weight so as to damage the grain sufficiently to prevent substantial rootlet growth without substantially damaging the aleurone layer, the dry mechanical dehusking method comprising

i. introducing the grain into an inverted frustoconical shell with its axis upright, and

ii. rotating blade means in said shell about said axis, said blade means comprising a plurality of sweptback generally curved blades each of which presents a blunt leading edge, at a blade tip speed between 100 and 400 feet/second; and

b. malting the dehusked grain.

WEST**Search Results - Record(s) 1 through 1 of 1 returned.**

1. Document ID: US 5759223 A

L13: Entry 1 of 1

File: USPT

Jun 2, 1998

US-PAT-NO: 5759223

DOCUMENT-IDENTIFIER: US 5759223 A

TITLE: Heat-treated corn gluten meal for fungal supplementation

DATE-ISSUED: June 2, 1998

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Carlson; Ting L.	Dayton	OH		
Thornton; Karen A.	Mount Vernon	IA		

US-CL-CURRENT: 71/5; 71/23

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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Terms	Documents
L12 not 18	1

Display Format: Previous Page Next Page

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End of Result Set

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L13: Entry 1 of 1

File: USPT

Jun 2, 1998

DOCUMENT-IDENTIFIER: US 5759223 A

TITLE: Heat-treated corn gluten meal for fungal supplementation

Detailed Description Text (6):

The terms "casing" and "capping" as used herein mean covering a mycelia-permeated compost bed with a thin layer of soil, peat, sand and/or other suitable material known by those of skill in the art after the mycelia have suitably developed. This allows the mushrooms to fruit or "flush" by producing sporophores. The casing acts as a support for the heavy mushroom caps so that they do not fall over and break the delicate roots through which they receive their sustenance, and also prevents the surface of the compost layer from drying out.

Detailed Description Text (42):

Sources of soluble carbon include carbohydrates, such as glucose, galactose, mannose, fructose, maltose, xylose, arabinose, dextrin, mannitol, sucrose, starch, sorbitol, lactose, rhamnose, etc., as well as natural sources of carbohydrates, such as the hot water extract of straw, molasses, grain, potatoes, fruits, whey, etc., and their by-products, fats and oils such as vegetable oils, animal fats, etc., proteinaceous materials such as whey, blood meal, oil seed meals, alfalfa, brewer's by-products, distiller's by-products and the like.

Detailed Description Text (56):

Corn gluten meal is commercially available as a co-product of corn milling from many sources, such as from Grain Processing Corporation (Muscatine, Iowa) or Corn Product, Corp. (Argo, Ill.). As is known by those of skill in the art, corn gluten meal is generally made by drying the liquid gluten stream separated from corn during corn wet milling processing. In the wet milling process of corn, the corn is steeped in sulfur dioxide-containing water, and the following fractions are obtained: corn starch, corn oil, defatted corn germ, corn hulls, corn steep liquor and corn gluten meal (the protein fraction). The acid condition of the sulfur-dioxide-containing water remains during the production of the corn gluten meal by-product, which typically has a moderately acid pH (approximately 3 to 4). Corn gluten meal is typically separated from the starch stream by centrifugation to yield a thick, yellow slurry of corn gluten meal containing 15 to 20% solids. Conventionally, corn gluten meal is filtered and dried to produce solid corn gluten meal, which is sold as an animal feed product. Corn gluten meal is typically composed of the materials listed below.

WEST

Search Results - Record(s) 1 through 2 of 2 returned.

1. Document ID: US 20030060369 A1

L16: Entry 1 of 2

File: PGPB

Mar 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030060369
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030060369 A1

TITLE: Root retardant

PUBLICATION-DATE: March 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Johal, Sarjit	Iowa City	IA	US	
Antrim, Richard L	Solon	IA	US	

US-CL-CURRENT: 504/174

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KNOB

2. Document ID: EP 1305397 A2 WO 200210331 A2 AU 200178080 A US 20030060369 A1

L16: Entry 2 of 2

File: DWPI

May 2, 2003

DERWENT-ACC-NO: 2002-227082

DERWENT-WEEK: 200331

COPYRIGHT 2003 DERWENT INFORMATION LTD

TITLE: Malting composition, useful in producing fermented beverages, e.g. malt liquors, comprises maltable grain and root retardant

INVENTOR: ANTRIM, R L; JOHAL, S

PRIORITY-DATA: 2000US-221830P (July 28, 2000), 2002US-0089496 (May 1, 2002)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 1305397 A2	May 2, 2003	E	000	C12C001/047
WO 200210331 A2	February 7, 2002	E	025	C12C001/047
AU 200178080 A	February 13, 2002		000	C12C001/047
US 20030060369 A1	March 27, 2003		000	A01N001/00

INT-CL (IPC): A01 N 1/00; A01 N 37/36; A01 N 63/02; A01 N 65/00; A23 L 1/185; C12 C 1/047

WEST

Search Results - Record(s) 1 through 10 of 36 returned.

 1. Document ID: US 20030077619 A1

L17: Entry 1 of 36

File: PGPB

Apr 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030077619

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030077619 A1

TITLE: Method of isolating human cDNAs by transfecting a nucleic acid sequence of a non-plant donor into a host plant in an anti-sense orientation

PUBLICATION-DATE: April 24, 2003

INVENTOR- INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 435/6; 800/288 2. Document ID: US 20030064392 A1

L17: Entry 2 of 36

File: PGPB

Apr 3, 2003

PGPUB-DOCUMENT-NUMBER: 20030064392

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030064392 A1

TITLE: Method of humanizing plant cDNAs by transfecting a nucleic acid sequence of a non-plant donor into a host plant in an anti-sense orientation

PUBLICATION-DATE: April 3, 2003

INVENTOR- INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 435/6; 800/288

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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3. Document ID: US 20030041355 A1

L17: Entry 3 of 36

File: PGPB

Feb 27, 2003

PGPUB-DOCUMENT-NUMBER: 20030041355

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030041355 A1

TITLE: Method of humanizing plant cDNA

PUBLICATION-DATE: February 27, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 800/288; 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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4. Document ID: US 20030028926 A1

L17: Entry 4 of 36

File: PGPB

Feb 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030028926

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20030028926 A1

TITLE: Method of isolating human cDNA

PUBLICATION-DATE: February 6, 2003

? INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 800/288; 435/6

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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5. Document ID: US 20030027183 A1

L17: Entry 5 of 36

File: PGPB

Feb 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030027183
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030027183 A1

TITLE: Method of identifying a nucleic acid sequence in a plant

PUBLICATION-DATE: February 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 435/6; 800/278, 800/280

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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 6. Document ID: US 20030027182 A1

L17: Entry 6 of 36

File: PGPB

Feb 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030027182
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030027182 A1

TITLE: Method of determining the presence of a trait in a plant by transfecting a nucleic acid sequence of a donor plant into a different host plant in an anti-sense orientation

PUBLICATION-DATE: February 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
Della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 435/6; 800/288

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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KOMC

 7. Document ID: US 20030027173 A1

L17: Entry 7 of 36

File: PGPB

Feb 6, 2003

PGPUB-DOCUMENT-NUMBER: 20030027173
 PGPUB-FILING-TYPE: new
 DOCUMENT-IDENTIFIER: US 20030027173 A1

TITLE: Method of determining the function of nucleotide sequences and the proteins they encode by transfecting the same into a host

PUBLICATION-DATE: February 6, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Della-Cioppa, Guy	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
Fitzmaurice, Wayne P.	Vacaville	CA	US	
Hanley, Kathleen	Vacaville	CA	US	
Kumagai, Monto H.	Davis	CA	US	
Lindbo, John A.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	
Padgett, Hal S.	Vacaville	CA	US	
Pogue, Gregory P.	Vacaville	CA	US	

US-CL-CURRENT: 435/6; 800/278

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KOMC
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8. Document ID: US 20030024008 A1

L17: Entry 8 of 36

File: PGPB

Jan 30, 2003

PGPUB-DOCUMENT-NUMBER: 20030024008
 PGPUB-FILING-TYPE: new
 DOCUMENT-IDENTIFIER: US 20030024008 A1

TITLE: Method of increasing grain crop

PUBLICATION-DATE: January 30, 2003

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Kumagai, Monto H.	Davis	CA	US	
Della-Cioppa, Guy R.	Vacaville	CA	US	
Erwin, Robert L.	Vacaville	CA	US	
McGee, David R.	Vacaville	CA	US	

US-CL-CURRENT: 800/278; 800/320.2

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KOMC
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9. Document ID: US 20020165370 A1

L17: Entry 9 of 36

File: PGPB

Nov 7, 2002

PGPUB-DOCUMENT-NUMBER: 20020165370
 PGPUB-FILING-TYPE: new
 DOCUMENT-IDENTIFIER: US 20020165370 A1

TITLE: Cytoplasmic gene inhibition or gene expression in transfected plants by a tobaviral vector

PUBLICATION-DATE: November 7, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Roberts, Peter D.	Benicia	CA	US	
Vaewhongs, Andy A.	Vacaville	CA	US	
Kumagai, Monto H.	Honolulu	HI	US	

US-CL-CURRENT: 536/23.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KOMC
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10. Document ID: US 20020138873 A1

L17: Entry 10 of 36

File: PGPB

Sep 26, 2002

PGPUB-DOCUMENT-NUMBER: 20020138873
 PGPUB-FILING-TYPE: new
 DOCUMENT-IDENTIFIER: US 20020138873 A1

TITLE: Multiple component RNA vector system for expression of foreign sequences

PUBLICATION-DATE: September 26, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Lewandowski, Dennis J.	Auburndale	FL	US	
Dawson, William O.	Winter Haven	FL	US	
Turpen, Thomas H.	Vacaville	CA	US	
Pogue, Gregory P.	Vacaville	CA	US	

US-CL-CURRENT: 800/280; 435/235.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KOMC
Draw Desc	Image									

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Terms	Documents
L14 not l16	36

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Search Results - Record(s) 11 through 20 of 36 returned.

 11. Document ID: US 6448046 B1

L17: Entry 11 of 36

File: USPT

Sep 10, 2002

US-PAT-NO: 6448046

DOCUMENT-IDENTIFIER: US 6448046 B1

TITLE: Recombinant animal viral nucleic acids

DATE-ISSUED: September 10, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Grantham; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann M.	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 435/70.1, 435/235.1, 435/320.1, 435/325, 435/455, 435/456, 435/69.1,
536/23.1, 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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 12. Document ID: US 6426185 B1

L17: Entry 12 of 36

File: USPT

Jul 30, 2002

US-PAT-NO: 6426185

DOCUMENT-IDENTIFIER: US 6426185 B1

TITLE: Method of compiling a functional gene profile in a plant by transfecting a nucleic acid sequence of a donor plant into a different host plant in an anti-sense orientation

DATE-ISSUED: July 30, 2002

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Kumagai; Monto H.	Davis	CA		
della-Cioppa; Guy R.	Vacaville	CA		
Erwin; Robert L.	Vacaville	CA		
McGee; David R.	Vacaville	CA		

US-CL-CURRENT: 435/6; 435/468, 435/91.1, 536/23.1, 536/23.6, 536/23.72, 536/24.1, 536/24.5

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

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13. Document ID: US 6284492 B1

L17: Entry 13 of 36

File: USPT

Sep 4, 2001

US-PAT-NO: 6284492

DOCUMENT-IDENTIFIER: US 6284492 B1

TITLE: Recombinant animal viral nucleic acids

DATE-ISSUED: September 4, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Grantham; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann M.	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 435/70.1; 435/235.1, 435/320.1, 435/325, 435/455, 435/456, 435/69.1, 536/23.1, 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KMC

14. Document ID: US 6271440 B1

L17: Entry 14 of 36

File: USPT

Aug 7, 2001

US-PAT-NO: 6271440

DOCUMENT-IDENTIFIER: US 6271440 B1

** See image for Certificate of Correction **

TITLE: Plant regulatory proteins III

DATE-ISSUED: August 7, 2001

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Gubler; Franz Jacques	Lyneham			AU
Jacobsen; John Viggo	Weetangera			AU

US-CL-CURRENT: 800/284; 435/195, 435/410, 435/419, 435/471, 435/69.1, 536/23.1, 536/23.6, 800/278, 800/285, 800/295

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc Image					KWMC				

15. Document ID: US 6054566 A

L17: Entry 15 of 36

File: USPT

Apr 25, 2000

US-PAT-NO: 6054566

DOCUMENT-IDENTIFIER: US 6054566 A

TITLE: Recombinant animal viral nucleic acids

DATE-ISSUED: April 25, 2000

INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Grantham; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann Myers	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 536/23.1; 435/320.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc Image					KWMC				

16. Document ID: US 5889190 A

L17: Entry 16 of 36

File: USPT

Mar 30, 1999

US-PAT-NO: 5889190

DOCUMENT-IDENTIFIER: US 5889190 A

TITLE: Recombinant plant viral nucleic acids

DATE-ISSUED: March 30, 1999

INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Grantham; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann Myers	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 800/288; 435/235.1, 435/468, 435/472, 435/475, 435/476, 435/69.1,
435/69.4, 435/69.52, 435/69.6, 435/70.1, 536/23.72, 536/24.1, 536/24.5, 800/286,
800/298

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KMC

17. Document ID: US 5866785 A

L17: Entry 17 of 36

File: USPT

Feb 2, 1999

US-PAT-NO: 5866785

DOCUMENT-IDENTIFIER: US 5866785 A

TITLE: Recombinant plant viral nucleic acids

DATE-ISSUED: February 2, 1999

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Granthan; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann Myers	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 800/298; 435/235.1, 435/320.1, 435/69.1, 435/69.4, 435/69.52,
435/69.6, 536/23.72, 536/24.1, 536/24.5, 800/288

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw	Desc	Image							

KMC

18. Document ID: US 5591697 A

L17: Entry 18 of 36

File: USPT

Jan 7, 1997

US-PAT-NO: 5591697

DOCUMENT-IDENTIFIER: US 5591697 A

** See image for Certificate of Correction **

TITLE: Physiologically active substances of plant, process for the preparation thereof, and utilities thereof

DATE-ISSUED: January 7, 1997

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hasegawa; Koji	Sapporo			JP
Kakuta; Hideo	Sapporo			JP
Mizutani; Junya	Sapporo			JP

US-CL-CURRENT: 504/292; 47/59R, 47/DIG.10

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KOMC

19. Document ID: US 5589367 A

L17: Entry 19 of 36

File: USPT

Dec 31, 1996

US-PAT-NO: 5589367

DOCUMENT-IDENTIFIER: US 5589367 A

TITLE: Recombinant plant viral nucleic acids

DATE-ISSUED: December 31, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Granthan; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann M.	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 435/320.1; 435/69.1, 435/70.1, 536/23.72, 536/24.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KOMC

20. Document ID: US 5532206 A

L17: Entry 20 of 36

File: USPT

Jul 2, 1996

US-PAT-NO: 5532206

DOCUMENT-IDENTIFIER: US 5532206 A

TITLE: Method of treating plants or plant tissues with C-16,17-dihydro gibberellins

DATE-ISSUED: July 2, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE ZIP CODE COUNTRY
Evans; Lloyd T.	Campbell, Australian Capital Territory, 2600	AU
King; Roderick W.	Deakin, Australian Capital Territory, 2600	AU
Mander; Lewis N.	Aranda, Australian Capital Territory, 2614	AU
Pearce; David W.	Lethbridge, Alberta, T1K 1A3	CA
Pharis; Richard P.	Cochrane, Alberta, T0L 0W0	CA

US-CL-CURRENT: 504/176; 504/182, 504/299, 504/320, 504/348, 504/353

WEST

Search Results - Record(s) 21 through 30 of 36 returned.

 21. Document ID: US 5512673 A

L17: Entry 21 of 36

File: USPT

Apr 30, 1996

US-PAT-NO: 5512673

DOCUMENT-IDENTIFIER: US 5512673 A

TITLE: Physiologically active substances of plant, process for the preparation thereof, and utilities thereof

DATE-ISSUED: April 30, 1996

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hasegawa; Koji	Sapporo			JP
Kakuta; Hideo	Sapporo			JP
Mizutani; Junya	Sapporo			JP

US-CL-CURRENT: 536/128; 504/292, 536/123.13, 536/124, 536/4.1

KOMC

 22. Document ID: US 5472946 A

L17: Entry 22 of 36

File: USPT

Dec 5, 1995

US-PAT-NO: 5472946

DOCUMENT-IDENTIFIER: US 5472946 A

TITLE: Transdermal penetration enhancers

DATE-ISSUED: December 5, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peck; James V.	Richmond	VA	23233	
Minaskanian; Gevork	Richmond	VA	23233	

US-CL-CURRENT: 514/29; 514/24, 514/43, 514/946, 514/947

KOMC

23. Document ID: US 5455345 A

L17: Entry 23 of 36

File: USPT

Oct 3, 1995

US-PAT-NO: 5455345

DOCUMENT-IDENTIFIER: US 5455345 A

** See image for Certificate of Correction **

TITLE: Physiologically active substances of plant, process for the preparation thereof, and utilities thereof

DATE-ISSUED: October 3, 1995

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Hasegawa; Koji	Sapporo			JP
Kakuta; Hideo	Sapporo			JP
Mizutani; Junya	Sapporo			JP

US-CL-CURRENT: 536/123.13; 504/176, 504/292, 536/123, 536/123.1

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

 24. Document ID: US 5316931 A

L17: Entry 24 of 36

File: USPT

May 31, 1994

US-PAT-NO: 5316931

DOCUMENT-IDENTIFIER: US 5316931 A

TITLE: Plant viral vectors having heterologous subgenomic promoters for systemic expression of foreign genes

DATE-ISSUED: May 31, 1994

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Donson; Jon	Davis	CA		
Dawson; William O.	Winter Haven	FL		
Granthan; George L.	Riverside	CA		
Turpen; Thomas H.	Vacaville	CA		
Turpen; Ann M.	Vacaville	CA		
Garger; Stephen J.	Vacaville	CA		
Grill; Laurence K.	Vacaville	CA		

US-CL-CURRENT: 800/288; 435/320.1, 435/69.1, 435/70.1, 536/23.72, 536/24.1, 800/301,
800/317.3

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

 25. Document ID: US 4886545 A

L17: Entry 25 of 36

File: USPT

Dec 12, 1989

US-PAT-NO: 4886545

DOCUMENT-IDENTIFIER: US 4886545 A

TITLE: Compositions comprising 1-substituted azacycloalkanes and their uses

DATE-ISSUED: December 12, 1989

INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Peck, James V.	Costa Mesa	CA		
Minaskanian, Gevork	Irvine	CA		

US-CL-CURRENT: 504/358; 514/183, 514/212.03, 514/217.11, 514/328, 514/425, 514/946,
514/947, 8/564, 8/568, 8/574

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KMC

 26. Document ID: US 4762549 A

L17: Entry 26 of 36

File: USPT

Aug 9, 1988

US-PAT-NO: 4762549

DOCUMENT-IDENTIFIER: US 4762549 A

TITLE: Delivery of plant growth regulators

DATE-ISSUED: August 9, 1988

INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Rajadhyaksha, Vithal J.	Mission Viejo	CA		

US-CL-CURRENT: 504/358

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KMC

 27. Document ID: US 3896001 A

L17: Entry 27 of 36

File: USPT

Jul 22, 1975

US-PAT-NO: 3896001

DOCUMENT-IDENTIFIER: US 3896001 A

TITLE: Malting processes

DATE-ISSUED: July 22, 1975

INVENTOR- INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Barrett; James	Tonbridge			EN
Kirsope; Brian Heys	Redhill			EN
Palmer; Godfrey Henry Oliver	Copthorne			EN

US-CL-CURRENT: 435/185

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

28. Document ID: US 3647473 A

L17: Entry 28 of 36

File: USPT

Mar 7, 1972

US-PAT-NO: 3647473

DOCUMENT-IDENTIFIER: US 3647473 A

TITLE: MALTING GRAIN

DATE-ISSUED: March 7, 1972

INVENTOR-INFORMATION:

NAME	CITY	STATE	ZIP CODE	COUNTRY
Stowell; Keith Christopher	Newark			EN
Howlett; Peter Michael	Newark-on-Trent			EN

US-CL-CURRENT: 426/29; 426/18, 99/278, 99/600

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Drawn Desc	Image								

KIMC

29. Document ID: WO 9966029 A2 JP 2002518005 W AU 9942827 A EP 1084250 A2
BR 9911162 A CZ 200004643 A3 CN 1310761 A

L17: Entry 29 of 36

File: DWPI

Dec 23, 1999

DERWENT-ACC-NO: 2000-097742

DERWENT-WEEK: 200243

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TITLE: New isolated plant gibberellin 2-oxidase enzymes and nucleic acids, used to produce transgenic plants with improved or altered growth characteristics

INVENTOR: HEDDEN, P; PHILLIPS, A L ; THOMAS, S G

PRIORITY-DATA: 1998GB-0015404 (July 15, 1998), 1998GB-0012821 (June 12, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9966029 A2	December 23, 1999	E	041	C12N009/00
JP 2002518005 W	June 25, 2002		050	C12N009/04
AU 9942827 A	January 5, 2000		000	C12N009/00
EP 1084250 A2	March 21, 2001	E	000	C12N015/29
BR 9911162 A	April 3, 2001		000	C12N009/00
CZ 200004643 A3	May 16, 2001		000	C12N009/00
CN 1310761 A	August 29, 2001		000	C12N015/29

INT-CL (IPC): A01 H 5/00; C12 N 1/15; C12 N 1/19; C12 N 1/21; C12 N 5/10; C12 N 9/00; C12 N 9/02; C12 N 9/04; C12 N 15/09; C12 N 15/29; C12 N 15/82

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [KMC](#) |
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30. Document ID: WO 9940210 A1 AU 9925874 A

L17: Entry 30 of 36

File: DWPI

Aug 12, 1999

DERWENT-ACC-NO: 1999-494301

DERWENT-WEEK: 200005

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TITLE: Altering the expression of Alpha-amylase and protease for restricting germination and maintaining dormancy in seeds

INVENTOR: HO, T D; HOLAPPA, L D ; SIMMONS, M K W ; VERHEY, S D

PRIORITY-DATA: 1998US-0019155 (February 6, 1998)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9940210 A1	August 12, 1999	E	024	C12N015/82
AU 9925874 A	August 23, 1999		000	C12N015/82

INT-CL (IPC): A01 H 4/00; A01 H 5/00; C12 N 5/04; C12 N 15/29; C12 N 15/82

[Full](#) | [Title](#) | [Citation](#) | [Front](#) | [Review](#) | [Classification](#) | [Date](#) | [Reference](#) | [Sequences](#) | [Attachments](#) | [KMC](#) |
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Search Results - Record(s) 31 through 36 of 36 returned.

31. Document ID: WO 9700614 A1 US 6242381 B1 NL 1001620 C2 AU 9664170 A EP 847241 A1 JP 11514846 W

L17: Entry 31 of 36

File: DWPI

Jan 9, 1997

DERWENT-ACC-NO: 1997-087105

DERWENT-WEEK: 200133

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TITLE: Improvement in activity of plant growth regulators - by raising their local concn., or by increasing the plant's sensitivity by the use of elicitor(s)

INVENTOR: SMIT, G; VAN DER KRIEKEN, W M

PRIORITY-DATA: 1995NL-1001620 (November 9, 1995), 1995EP-0201686 (June 22, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9700614 A1	January 9, 1997	E	034	A01N061/00
US 6242381 B1	June 5, 2001		000	A01N025/00
NL 1001620 C2	December 24, 1996		023	A01N025/00
AU 9664170 A	January 22, 1997		000	A01N061/00
EP 847241 A1	June 17, 1998	E	000	A01N061/00
JP 11514846 W	December 21, 1999		030	A01G007/06

INT-CL (IPC): A01 G 7/06; A01 H 1/06; A01 H 5/00; A01 N 25/00; A01 N 25/04; A01 N 25/22; A01 N 25/28; A01 N 35/02; A01 N 37/02; A01 N 37/06; A01 N 43/54; A01 N 47/12; A01 N 61/00; A01 N 65/00; C12 N 15/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	View
Draw. Desc	Image									

32. Document ID: WO 9416053 A1 HU 220583 B1 FI 9300182 A AU 9348214 A FI 94875 B EP 678120 A1 CZ 9501793 A3 SK 9500899 A3 JP 08505056 W AU 680426 B HU 72484 T CZ 285939 B6 RU 2126443 C1 SK 281407 B6

L17: Entry 32 of 36

File: DWPI

Jul 21, 1994

DERWENT-ACC-NO: 1994-249202

DERWENT-WEEK: 200234

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TITLE: Treatment of seed material to be germinated - by addn. of lactic acid bacteria prepns. to inhibit microbial growth in seed material

INVENTOR: HAIKARA, A; MATTILA-SANDHOLM, T

PRIORITY-DATA: 1993FI-0000182 (January 15, 1993)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9416053 A1	July 21, 1994	E	048	C12C001/02
HU 220583 B1	March 28, 2002		000	C12C001/027
FI 9300182 A	July 16, 1994		000	C12C001/04
AU 9348214 A	August 15, 1994		000	C12C001/02
FI 94875 B	July 31, 1995		000	C12C001/04
EP 678120 A1	October 25, 1995	E	000	C12C001/02
CZ 9501793 A3	December 13, 1995		000	C12C001/02
SK 9500899 A3	May 8, 1996		000	C12C001/02
JP 08505056 W	June 4, 1996		051	C12C001/02
AU 680426 B	July 31, 1997		000	C12C001/02
HU 72484 T	April 29, 1996		000	C12C001/027
CZ 285939 B6	December 15, 1999		000	C12C001/02
RU 2126443 C1	February 20, 1999		000	C12C001/02
SK 281407 B6	March 12, 2001		000	C12C001/02

INT-CL (IPC): A23B 9/26; A23B 9/28; A23L 1/172; A23L 1/185; A23L 1/186; C12C 1/00; C12C 1/02; C12C 1/027; C12C 1/04; C12C 1/047; C12C 1/067

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KIMC
Draw	Desc	Image								

33. Document ID: EP 576116 A1 ES 2148201 T3 AU 9335203 A CA 2092675 A JP 06049089 A JP 06092816 A JP 06157228 A NZ 247135 A AU 658982 B US 5455345 A US 5512673 A US 5591697 A CN 1080924 A IL 105011 A JP 2686027 B2 JP 2717050 B2 KR 9702811 B1 EP 576116 B1 DE 69328953 E

L17: Entry 33 of 36

File: DWPI

Dec 29, 1993

DERWENT-ACC-NO: 1994-001285

DERWENT-WEEK: 200058

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TITLE: Allelo-pathic plant growth di:saccharide derivs. - used for bean or barley sprouting or shoot growth

INVENTOR: HASEGAWA, K; KAKUTA, H ; MIZUTANI, J

PRIORITY-DATA: 1993JP-0062729 (February 26, 1993), 1992JP-0131050 (May 22, 1992), 1992JP-0246813 (September 16, 1992), 1992JP-0320898 (November 30, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 576116 A1	December 29, 1993	E	057	C07H003/04
ES 2148201 T3	October 16, 2000		000	C07H003/04
AU 9335203 A	November 25, 1993		000	C07H003/04
CA 2092675 A	November 23, 1993		000	C07H007/02
JP 06049089 A	February 22, 1994		023	C07H007/033
JP 06092816 A	April 5, 1994		004	A01N065/00
JP 06157228 A	June 3, 1994		007	A01N065/00
NZ 247135 A	September 27, 1994		000	C07H003/04
AU 658982 B	May 4, 1995		000	C07H003/04
US 5455345 A	October 3, 1995		039	C07H003/04
US 5512673 A	April 30, 1996		040	C07H001/08
US 5591697 A	January 7, 1997		041	A01N043/16
CN 1080924 A	January 19, 1994		000	C07D407/12
IL 105011 A	July 13, 1997		000	C07H003/04
JP 2686027 B2	December 8, 1997		004	A01N065/00
JP 2717050 B2	February 18, 1998		023	C07H007/033
KR 9702811 B1	March 11, 1997		000	C07H015/04
EP 576116 B1	July 5, 2000	E	000	C07H003/04
DE 69328953 E	August 10, 2000		000	C07H003/04

9702811 B1 INT-CL (IPC): A01G 31/00; A01N 43/16; A01N 65/00; A61K 31/715; A61K 31/725; C07D 407/12; C07H 1/08; C07H 3/04; C07H 3/08 ; C07H 7/02; C07H 7/033; C07H 13/04; C07H 15/04; C07H 15/18

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWMC
Draw Desc	Clip Img	Image								

34. Document ID: GB 2032601 A

L17: Entry 34 of 36

File: DWPI

May 8, 1980

DERWENT-ACC-NO: 1980-33288C

DERWENT-WEEK: 198019

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TITLE: Movable bed grain malting apparatus - with return conveyor for selectively recycling grain

INVENTOR: BLANCH, A B

PRIORITY-DATA: 1979GB-0034607 (October 5, 1979), 1978GB-0039712 (October 7, 1978)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
GB 2032601 A	May 8, 1980		000	

INT-CL (IPC): C12C 1/12; F26B 17/04

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWMC
Draw Desc	Clip Img	Image								

35. Document ID: BE 839523 A CA 1079661 A CS 7601603 A DE 2610532 A DK 7601074 A FR 2303852 A GB 1476082 A IT 1057742 B NL 7602563 A US 4052795 A

L17: Entry 35 of 36

File: DWPI

Jul 1, 1976

DERWENT-ACC-NO: 1976-59714X

DERWENT-WEEK: 197632

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TITLE: Malting process using grain of reduced moisture content - to prevent growth of roots and increase yield of malt

PRIORITY-DATA: 1975GB-0010777 (March 14, 1975)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
BE 839523 A	July 1, 1976		000	
CA 1079661 A	June 17, 1980		000	
CS 7601603 A	May 30, 1980		000	
DE 2610532 A	September 30, 1976		000	
DK 7601074 A	November 8, 1976		000	
FR 2303852 A	November 12, 1976		000	
GB 1476082 A	June 10, 1977		000	
IT 1057742 B	March 30, 1982		000	
NL 7602563 A	September 16, 1976		000	
US 4052795 A	October 11, 1977		000	

INT-CL (IPC): C12C 1/04; F26B 7/00

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWMC
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36. Document ID: JP 73010216 B

L17: Entry 36 of 36

File: DWPI

DERWENT-ACC-NO: 1973-19409U

DERWENT-WEEK: 197314

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TITLE: Brewing malt mfre - utilising pyrimidine derivs

PRIORITY-DATA: 1968JP-0083276 (November 15, 1968)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 73010216 B			000	

INT-CL (IPC): C12C 1/02

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWMC
Drawn Desc	Image									

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L17: Entry 18 of 36

File: USPT

Jan 7, 1997

DOCUMENT-IDENTIFIER: US 5591697 A

**** See image for Certificate of Correction ****

TITLE: Physiologically active substances of plant, process for the preparation thereof, and utilities thereof

Brief Summary Text (11):

Bean sprouts, barley malt, etc., are mainly grown legume sprouts in the dark (referred to as "moyashi", hereinafter) and 1 week or so is required for their industrial production. In recent years, it has been conducted to inhibit the growth of roots and remove roots mechanically in the production of moyashi in order to improve their value as commercial products.

WEST

L17: Entry 20 of 36

File: USPT

Jul 2, 1996

DOCUMENT-IDENTIFIER: US 5532206 A

TITLE: Method of treating plants or plant tissues with C-16,17-dihydro gibberellins

Detailed Description Text (21):

(19) in the malting of barley grain significant amounts of stored assimilate are diverted into the developing root and shoot of the germinating grain. This is wasteful and is considered a loss by the brewing and malting industries. It is presently controlled in some countries by the use of bromate ion, the safety of which can now be questioned, followed by application of GA._{sub.3}, the latter stimulating .alpha.-amylase production over and above that obtained by use of the malted grain alone, with or without bromate ion. Influencing (retarding) the allometric distribution of stored assimilate from the starchy endosperm of the grain into the root and shoot can be accomplished by imbibing the seed in the presence of low levels (ca. 10.^{sup.-5} to 10.^{sup.-10} M) of C-16,17-dihydro gibberellins. This may then be followed by treatment with GA._{sub.3} to induce .alpha.-amylase production (the .alpha.-amylase breaks down starch to sugar).

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L17: Entry 27 of 36

File: USPT

Jul 22, 1975

DOCUMENT-IDENTIFIER: US 3896001 A
TITLE: Malting processes

Brief Summary Text (9):

It has been shown in U.S. Pat. No. 3,085,945 that the growth of rootlets in the production of malt can be inhibited by the acidulation of the steep water. Since the rootlets ultimately are detached from the grain, the inhibition of rootlet growth decreases the malting loss and it is for that purpose that the acidulation treatment was proposed. No acceleration of the malting process has been reported to result from acidulation in the malting or normal barley.

Brief Summary Text (13):

In contrast in the process of the present invention the added acid penetrates the endosperm through the perforations in the pericarp and testa and it is believed that the acid has a synergistic effect with gibberellic acid on the breakdown of the endosperm. Particular advantages of the process of the present invention are that it leads to an acceleration in the reduction of the .beta.-glucan content of the malt, and in the increase in the content of soluble nitrogenous substances in the malt. The acceleration of the breakdown of the hemicellulosic and proteinaceous matter of the endosperm structure permits satisfactory modified malt to be obtained more quickly than can be achieved by the use of abraded barley and gibberellic acid alone. Whilst it is preferred to employ acid of sufficient concentration to inhibit rootlet growth (and thus enjoy the consequent reduction of process loss) it is possible to obtain the accelerated malting resulting from the use of acid in conjunction with gibberellic acid with acid of a concentration insufficient to completely inhibit the growth of roots.

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L17: Entry 28 of 36

File: USPT

Mar 7, 1972

DOCUMENT-IDENTIFIER: US 3647473 A
TITLE: MALTING GRAIN

Abstract Text (1):

A process and apparatus for dehusking cereal grain by a dry mechanical method at a temperature not above about 105. degree. F., and wherein the moisture content of the grain is above about 8 percent by weight in order to damage the grain so that substantial rootlet growth is prevented without substantially damaging the aleurone layer. The dehusked grain is subsequently malted and there are advantages compared with conventional malting of husked grain.

Brief Summary Text (5):

We have now found that malted cereal grain can be prepared by removing husk from the grain by a dry mechanical method damaging the grain so that substantial rootlet growth is prevented without substantially damaging the aleurone layer thus allowing the dehusked grain to malt.

Brief Summary Text (6):

The invention provides a process of preparing malted cereal grain comprising the steps of removing husk from the grain by a dry mechanical method damaging the grain so that substantial rootlet growth is prevented without substantially damaging the aleurone layer and malting the dehusked grain.

Brief Summary Text (27):

The invention also provides malting plant comprising dehusking means for removing husk from cereal grain damaging the grain so that substantial rootlet growth is prevented without damaging the aleurone layer, and means for malting the dehusked grain.

CLAIMS :

11. Malting plant comprising mechanical dehusking means for removing husk from cereal grain at a temperature not above about 105. degree. F. and at a grain moisture content above about 8 percent by weight which damages the grain sufficiently to prevent substantial rootlet growth without substantially damaging the aleurone layer, and means for malting the dehusked grain.

12. Wort production plant comprising

a. a malting plant which comprises mechanical dehusking means for removing husk from cereal grain at a temperature not above about 105.degree. F. and at a grain moisture content above about 8 percent by weight which damages the grain sufficiently to prevent substantial rootlet growth without substantially damaging the aleurone layer, and means for malting the dehusked grain,

b. mashing means for receiving malted grain from the said malting means and for mashing said grain to produce wort,

c. means for separating husk from the dehusking means and

d. means for introducing said separated husk into the said mashing means.

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L17: Entry 32 of 36

File: DWPI

Jul 21, 1994

DERWENT-ACC-NO: 1994-249202

DERWENT-WEEK: 200234

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TITLE: Treatment of seed material to be germinated - by addn. of lactic acid bacteria prepns. to inhibit microbial growth in seed material

Basic Abstract Text (3):

USE/ADVANTAGE - The method is used partic. with barley kernels used in a malting process to inhibit the growth of Fusarium moulds or with seeds which are to be converted to sprouts for nutrition (claimed). The lactic acid bacteria prepns. inhibit the growth of detrimental microorganisms without adversely affecting the quality of the germinated prod.

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L17: Entry 33 of 36

File: DWPI

Dec 29, 1993

DERWENT-ACC-NO: 1994-001285

DERWENT-WEEK: 200058

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TITLE: Allelo-pathic plant growth di:saccharide derivs. - used for bean or barley sprouting or shoot growth

INVENTOR: HASEGAWA, K; KAKUTA, H ; MIZUTANI, J

PATENT-ASSIGNEE: RES DEV CORP JAPAN (SHKJ) , JAPAN SCI & TECHNOLOGY CORP (NISCN) , SHINGIJUTSU JIGYODAN (SHKJ)

PRIORITY-DATA: 1993JP-0062729 (February 26, 1993), 1992JP-0131050 (May 22, 1992) , 1992JP-0246813 (September 16, 1992), 1992JP-0320898 (November 30, 1992)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
EP 576116 A1	December 29, 1993	E	057	C07H003/04
ES 2148201 T3	October 16, 2000		000	C07H003/04
AU 9335203 A	November 25, 1993		000	C07H003/04
CA 2092675 A	November 23, 1993		000	C07H007/02
JP 06049089 A	February 22, 1994		023	C07H007/033
JP 06092816 A	April 5, 1994		004	A01N065/00
JP 06157228 A	June 3, 1994		007	A01N065/00
NZ 247135 A	September 27, 1994		000	C07H003/04
AU 658982 B	May 4, 1995		000	C07H003/04
US 5455345 A	October 3, 1995		039	C07H003/04
US 5512673 A	April 30, 1996		040	C07H001/08
US 5591697 A	January 7, 1997		041	A01N043/16
CN 1080924 A	January 19, 1994		000	C07D407/12
IL 105011 A	July 13, 1997		000	C07H003/04
JP 2686027 B2	December 8, 1997		004	A01N065/00
JP 2717050 B2	February 18, 1998		023	C07H007/033
KR 9702811 B1	March 11, 1997		000	C07H015/04
EP 576116 B1	July 5, 2000	E	000	C07H003/04
DE 69328953 E	August 10, 2000		000	C07H003/04

DESIGNATED-STATES: AT BE CH DE DK ES FR GB IT LI NL SE AT BE CH DE DK ES FR GB IT LI NL SE

CITED-DOCUMENTS: 3.Jnl.Ref; CN 1033229 ; JP 57165302 ; US 3567421

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
EP 576116A1	March 12, 1993	1993EP-0301901	
ES 2148201T3	March 12, 1993	1993EP-0301901	
ES 2148201T3		EP 576116	Based on
AU 9335203A	March 12, 1993	1993AU-0035203	
CA 2092675A	March 12, 1993	1993CA-2092675	
JP 06049089A	February 26, 1993	1993JP-0062729	
JP 06092816A	September 16, 1992	1992JP-0246813	
JP 06157228A	November 30, 1992	1992JP-0320898	
NZ 247135A	March 12, 1993	1993NZ-0247135	
AU 658982B	March 12, 1993	1993AU-0035203	
AU 658982B		AU 9335203	Previous Publ.
US 5455345A	March 12, 1993	1993US-0030732	
US 5512673A	March 12, 1993	1993US-0030732	Div ex
US 5512673A	September 30, 1994	1994US-0316350	
US 5512673A		US 5455345	Div ex
US 5591697A	March 12, 1993	1993US-0030732	Div ex
US 5591697A	April 28, 1995	1995US-0431263	
US 5591697A		US 5455345	Div ex
CN 1080924A	March 15, 1993	1993CN-0104400	
IL 105011A	March 11, 1993	1993IL-0105011	
JP 2686027B2	September 16, 1992	1992JP-0246813	
JP 2686027B2		JP 6092816	Previous Publ.
JP 2717050B2	February 26, 1993	1993JP-0062729	
JP 2717050B2		JP 6049089	Previous Publ.
KR 9702811B1	March 15, 1993	1993KR-0003907	
EP 576116B1	March 12, 1993	1993EP-0301901	
DE 69328953E	March 12, 1993	1993DE-0628953	
DE 69328953E	March 12, 1993	1993EP-0301901	
DE 69328953E		EP 576116	Based on

9702811 B1 INT-CL (IPC) : A01G 31/00; A01N 43/16; A01N 65/00; A61K 31/715; A61K 31/725; C07D 407/12; C07H 1/08; C07H 3/04; C07H 3/08 ; C07H 7/02; C07H 7/033; C07H 13/04; C07H 15/04; C07H 15/18

ABSTRACTED-PUB-NO: EP 576116A

BASIC-ABSTRACT:

Disaccharide derivs. of formula (I) and their salts are new. Where, R1-R5 = H, Ac, or benzyl; R6 = H, OH, OAc, or benzyloxy; R7 = H, or R6R7 together = a bond; and R8 = COOH, COOMe, CH2OH, or CH2OAc.

USE - (I), excluding benzyl or benzyloxy derivs., or acetyl derivs. at R6 and R8, are allelopathic substances of value in plant growth regulation. They promote the growth of hypocotyls (shoots) of a wide variety of plants. At low concns. root growth is promoted, but is inhibited at high concns. (I) are useful in enhancing growth of bean sprouts and barley malt, which normally require about a week in industrial prodn., and by restricting root growth, improve the commercial value of legume sprouts ''moyashi'', avoiding the need for manual de-rooting. Other examples are tomato, lettuce, and cabbage. Allelopathic cpds. also promote the ripeness of fruits. For non-sprouting uses, active (I) can be used in hydroponic soil culture, or sprayed on to seeds or plants at concns. of 1-10000 ppm.

ABSTRACTED-PUB-NO: EP 576116B

EQUIVALENT-ABSTRACTS:

Disaccharide derivs. of formula (I) and their salts are new. Where, R1-R5 = H, Ac,

or benzyl; R6 = H, OH, OAc, or benzyloxy; R7 = H, or R6R7 together = a bond; and R8 = COOH, COOMe, CH2OH, or CH2OAc.

USE - (I), excluding benzyl or benzyloxy derivs., or acetyl derivs. at R6 and R8, are allelopathic substances of value in plant growth regulation. They promote the growth of hypocotyls (shoots) of a wide variety of plants. At low concns. root growth is promoted, but is inhibited at high concns. (I) are useful in enhancing growth of bean sprouts and barley malt, which normally require about a week in industrial prodn., and by restricting root growth, improve the commercial value of legume sprouts "moyashi", avoiding the need for manual de-rooting. Other examples are tomato, lettuce, and cabbage. Allelopathic cpds. also promote the ripeness of fruits. For non-sprouting uses, active (I) can be used in hydroponic soil culture, or sprayed on to seeds or plants at concns. of 1-10000 ppm.

US 5512673A

A process for the prepn. of a cpd. of formula (I) and its salts, which comprises chemical hydrolysis of a cpd. of formula (II) or its salts.

US 5591697A

A method for culture, where an artificial soil or a culture solution contains the compound of formula (Ia) or a salt thereof.

CHOSEN-DRAWING: Dwg.1/22 Dwg.0/22 Dwg.0/0

DERWENT-CLASS: C02 P13

CPI-CODES: C07-A02; C14-U01C;

WEST

L17: Entry 34 of 36

File: DWPI

May 8, 1980

DERWENT-ACC-NO: 1980-33288C

DERWENT-WEEK: 198019

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TITLE: Movable bed grain malting apparatus - with return conveyor for selectively recycling grain

INVENTOR: BLANCH, A B

PATENT-ASSIGNEE: ALVAN BLANCH DEV CO LTD (ALVAN)

PRIORITY-DATA: 1979GB-0034607 (October 5, 1979), 1978GB-0039712 (October 7, 1978)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
GB 2032601 A	May 8, 1980		000	

INT-CL (IPC): C12C 1/12; F26B 17/04

ABSTRACTED-PUB-NO: GB 2032601A

BASIC-ABSTRACT:

A malting appts. comprises a movable bed formed by an endless louvred or perforated belt, the upper run defining the bed for the grain. Air having a predetermined temp. and humidity is passed through the bed.

A conveyor is positioned above the upper run of the bed and extends from one end of it to the other. Grain is introduced onto the conveyor adjacent to the discharge end of the bed-defining run, and is carried by the conveyor to its other end from where it is discharged onto the bed. Grain discharged from the bed-defining run is discharged onto an elevator which is operable selectively to return the grain to the end of the conveyor, or to discharge it externally.

The appts. is used for the germination of grain e.g. during the malting of barley. The grain is returned to prevent intertwining of the roots to form a mat.

ABSTRACTED-PUB-NO: GB 2032601A

EQUIVALENT-ABSTRACTS:

DERWENT-CLASS: D16 Q76

CPI-CODES: D03-J01; D05-B;

WEST

L17: Entry 35 of 36

File: DWPI

Jul 1, 1976

DERWENT-ACC-NO: 1976-59714X

DERWENT-WEEK: 197632

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TITLE: Malting process using grain of reduced moisture content - to prevent growth of roots and increase yield of malt

PATENT-ASSIGNEE: POLLOCK & POOL LTD (POLLN), POLLOCK J R A (POLLI)

PRIORITY-DATA: 1975GB-0010777 (March 14, 1975)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
BE 839523 A	July 1, 1976		000	
CA 1079661 A	June 17, 1980		000	
CS 7601603 A	May 30, 1980		000	
DE 2610532 A	September 30, 1976		000	
DK 7601074 A	November 8, 1976		000	
FR 2303852 A	November 12, 1976		000	
GB 1476082 A	June 10, 1977		000	
IT 1057742 B	March 30, 1982		000	
NL 7602563 A	September 16, 1976		000	
US 4052795 A	October 11, 1977		000	

INT-CL (IPC): C12C 1/04; F26B 7/00

ABSTRACTED-PUB-NO: BE 839523A

BASIC-ABSTRACT:

A malting process comprises (i) macerating cereal grains of moisture content which is insufficient to permit the growth of roots of dry wt. >0.5% of dry wt. of the grains on keeping for 5 days in air at 16 degrees C., (ii) rupturing the surface of the macerated grains by passing between fixed cylinders so as to deform the grains without significant permanent alteration, (iii) treating the grains with gibberellic acid, (iv) exposing the grains to the air, and (v) drying. ADVANTAGES The energetically costly evapn. of water from the malted grains of prior processes is avoided; growth of the roots is greatly reduced; yield of malt is increased; increased productivity from appts. since the volume occupied is reduced; need for conditioning of the air is avoided since there is less heat of respiration to be removed.

ABSTRACTED-PUB-NO: BE 839523A

EQUIVALENT-ABSTRACTS:

DERWENT-CLASS: D16 Q76

CPI-CODES: D05-B;

WEST

End of Result Set

L17: Entry 36 of 36

File: DWPI

DERWENT-ACC-NO: 1973-19409U

DERWENT-WEEK: 197314

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TITLE: Brewing malt mfre - utilising pyrimidine derivs

PATENT-ASSIGNEE: YAMASA SYOYU CO LTD (YAMS)

PRIORITY-DATA: 1968JP-0083276 (November 15, 1968)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 73010216 B			000	

INT-CL (IPC): C12C 1/02

ABSTRACTED-PUB-NO: JP 73010216B

BASIC-ABSTRACT:

Method comprises adding a mixt (contg one or more pyrimidine ribonucleosides) to barley grains in malt making. Addn of these derivs contributes to activation of diastase as well as retarding germination. The addn protects the malt from inactivation of enzymes during heat drying process. Pref. the concn for retarding root shooting is 500 mg/l, and for increasing diastase activity in green malt 50 mg/l. In an example 300g of selected barley grains are immersed for 18 hrs. in an aq. soln of disodium 5'-cytidylate (50 mg/l). Germination was carried out at 45% moisture. After 5 days 100 grains were measured for relative extension of root (length of root/length of grain). Mean value was 1.362, whereas that of the control was 1.560.

ABSTRACTED-PUB-NO: JP 73010216B

EQUIVALENT-ABSTRACTS:

DERWENT-CLASS: D16

CPI-CODES: D05-B;